



Rhode Island Department of Health



Rhode Island HL7 2.5.1 Implementation Guide Immunization Messaging

Version 1.1

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This document is a work in process. If you have questions or comments please contact Kim Salisbury-Keith at the Rhode Island Department of Health.

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VERSION HISTORY

Version #	Revision Date	Reason
1.0	August 2013	First release Rhode Island Department of Health HL7 v2.5.1 Implementation Guide Immunization Messaging–VXU only.
1.1	May 2014	<ol style="list-style-type: none">1. Added OBX-14 to with Evidence of immunity example in Appendix A2. Change references to NIP0001 to the correct table NIP0013. Updates to the Test Procedure, getting started section.4. Additional information about KIDSNET processing MSH-11 Processing Id5. Updates to references to MSH-22 (Responsible Organization) based in guidance from the updated CDC implementation guide6. Updates to the NK1 section stating that the segment is required (RE).if available and mother's information is preferred.7. The RXA-17 manufacturer codes section now states that OTH and UNK are not accepted by KIDSNET.8. Updated Acknowledgement section based on clarifications from the updated CDC implementation guide. This includes detailed information about the ERR segment as well as examples in Appendix B.9. Updated examples in Appendix B including Acknowledgement examples and supporting tables.

Table Of Contents

VERSION HISTORY.....	2
Table Of Contents	3
1. Introduction	5
Intended Audience.....	6
Scope	7
Organization and Flow	7
Testing Procedure.....	8
2. KIDSNET Web Service Operations	9
Information Exchange Rules.....	9
Transport - Web Service Information	9
SOAP Method (preferred transport).....	9
HTTPS Post Method.....	10
3. Supported HL7 Message Types and Message Structure	11
VXU – Unsolicited Vaccination Update Grammar	14
FHS—File Header Segment.....	15
FTS—File Trailer Segment.....	15
BHS—Batch Header Segment	15
BTS—Batch Trailer Segment	15
MSH—Message Header Segment	15
PID—Patient Identifier Segment	19
PD1—Patient Demographic Segment.....	24
PV1—Patient Visit Segment.....	25
NK1—Next of Kin Segment.....	25
ORC—Order Request Segment	28
RXA-- Pharmacy/Treatment Administration Segment	31
RXR-- Pharmacy/Treatment Route Segment.....	38
OBX—Observation Result Segment.....	40
NTE—Note Segment.....	44
ACK – Message Acknowledgement Grammar.....	45
Acknowledging a Message--ACK	45
Reviewing ACK	45

MSH—Message Header Segment for ACK	45
MSA—Message Acknowledgement Segment	46
ERR – Error Segment	47

Appendix A: Client specific conditions (Evidence of Immunity, Adverse Reactions, Contraindications)
..... **53**

Send immunizations associated with Evidence of immunity	53
Send immunizations associated with reactions (adverse events)	53
Contraindications to Immunization	54

Appendix B: VXU and ACK Examples **55**

Example VXU # 1-Basic message with No Errors.....	55
Example VXU # 2-Message with Non-Fatal Errors	57
Example VXU # 3-Message with Fatal Errors	59

1. Introduction

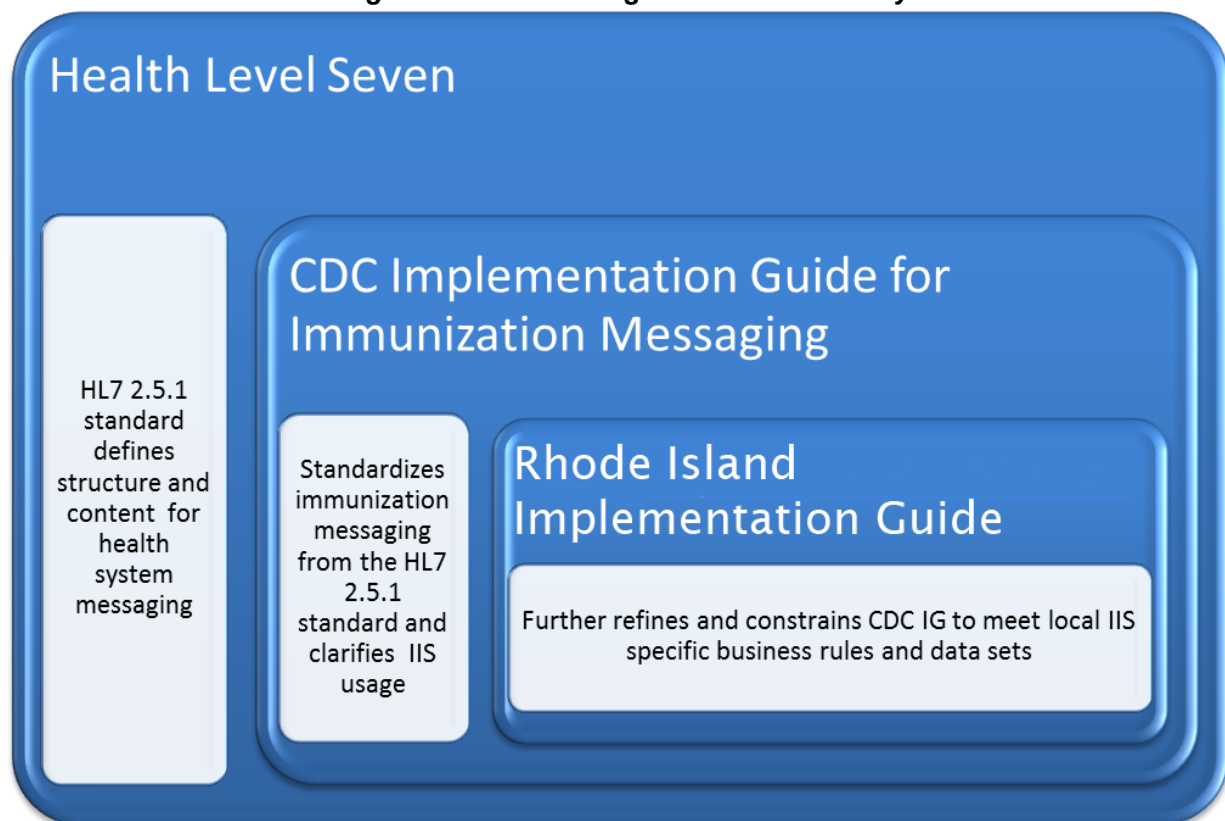
The Rhode Island Department of Health (HEALTH) created its integrated child health information system, KIDSNET, to ensure that all children receive preventive care that is coordinated and comprehensive while offering better service to families. Rhode Island's Immunization Information System (IIS) is part of KIDSNET.

Access to KIDSNET through the secure web application is role-based. Individual users and groups have their level of access specified in User Agreements or Data Sharing Agreements. Access is based on the "need to know". These Agreements must be amended prior to allowing vendors, developers, and IT consultant's access to identifiers, passwords, or patient data.

Currently KIDSNET only processes immunization transactions for people who are less than 19 years old. The Rhode Island (RI) Implementation Guide will be revised when the capability to receive immunizations for all ages is in place.

Three controlling documents define how the KIDSNET HL7 data exchange interface works. They are arranged in a hierarchy of documents, each refining and constraining the HL7 Standard.

Figure: HL7 Controlling Document Hierarchy



The first document is the HL7 2.5.1 standard developed by Health Level Seven, a not-for-profit ANSI-accredited standards developing organization. This standard defines the structure and content of immunization messages, but leaves many specific implementation details undecided. Beneficial information on HL7 and a copy of the HL7 message standard can be obtained from the Health Level Seven website at <http://www.hl7.org>.

The second document is the CDC's **HL7 2.5.1 Implementation Guide for Immunization Messaging, Release 1.4** (CDC IG). This guide gives specific instructions regarding how to report to immunization information systems, but still leaves some implementation decisions to each state IIS. This guide and other technical information can be obtained from the CDC website at <http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html>.

The third document is this document. It finalizes all implementation decisions and defines exactly what KIDSNET will and will not accept. It is written in accordance with the standards set in the first two documents. This RI implementation guide has taken great care to point out differences from the CDC IG by adding additional columns to the tables. In cases where this guide differs from the CDC IG, both the CDC IG column followed the local usage specification will be present.

This effort will prove highly useful in the larger interoperability effort for Electronic Health Record Systems, Indian Health Services, and any other electronic exchange that may span multiple IIS. Providing this information will allow the implementers of external systems to accurately compare the CDC IG with a local implementation guide, and compare differences between two different local implementation guides much easier than in the past.

An important part of this standardization is defining the data elements that are required. The Rhode Island Department of Health Implementation Guide (IG) conforms to the standard documents that it is derived from, however, not all required data elements are currently stored in KIDSNET. Work is in process to add these data elements to KIDSNET.

All "Required" data will be reviewed during the testing phase, whether or not they are currently stored in KIDSNET. KIDSNET enhancements will occur so that all "**Required**" HL7 data fields listed as NVAC core data elements are stored and/or updated in KIDSNET. (NVAC core data elements can be found here: <http://www.cdc.gov/vaccines/programs/iis/func-stds-appxB.pdf>)

Intended Audience

The RI IG is intended for technical staff at EHRs and other groups that want to submit HL7 2.5.1 VXU messages to KIDSNET. The reader should have a solid HL7 foundation and be familiar with the contents of the CDC IG (<http://www.cdc.gov/vaccines/programs/iis/stds/standards.htm>). Chapters 2 and 3 of the CDC IG provide HL7 foundational concepts. The goal of the RI IG is to provide an unambiguous specification for creating and interpreting messages.

Scope

The initial implementation of the KIDSNET 2.5.1 web service includes the following functionality:

- Receiving immunization histories for individuals
- Receiving demographic information about the individuals in VXU messages.
- Acknowledging receipt of immunization information
- Reporting errors in the messaging process

Future enhancements will support the processing of patients 19 years of age and older, and two-way messaging (i.e. receiving requests for patient immunization history and responding with that history.)

Organization and Flow

This Rhode Island IG contains information about the KIDSNET Web Services that support the transmission of the incoming HL7 messages and the outgoing HL7 responses. This information is followed by a detailed description of the supported HL7 messages, the HL7 segments involved in the order in which they shall be sent, and the details about each data element within the segments.

Examples have been added throughout this IG to assist the reader. Where possible, code sets have been included with the description of the data element instead of putting this information in an Appendix. In some cases only the code-set values accepted by KIDSNET are given. For these situations a note is included to inform the reader that the listed codes are a subset of a larger code-set. The larger code set is available in the Appendix of the CDC v2.5.1 IG.

Appendix A of this document contains examples of client specific conditions such evidence of immunity, contraindications, and reactions. Appendix B contains examples of a VXU messages and the associated HL7 acknowledgements (ACK).

It is important to note that this guide adheres to the CDC IG on several key aspects including:

- Data type specifications from the CDC IG have not been redefined and usage has not been changed.
- Standardized vocabulary is supported as specified in the CDC IG.
- To the extent possible, data sets and business rules will adhere to the CDC IG.

In cases where differences exist between this guide and the CDC IG, the differences will be clearly defined in the appropriate sections of this guide.

Testing Procedure

Testing is required for new immunization data exchange partners and when a new version of HL7 is used to send the message. Practices successfully sending HL7 2.3.1 messages to KIDSNET must enter a new test phase when they send HL7 2.5.1 messages. Before permitting the KIDSNET system to be updated with HL7 2.5.1 immunization messages from a potential information exchange partner, a series of tests are required. Testing is an iterative process. **A move to production is dependent on demonstrating the capacity to message without warnings or fatal errors.** When all issues have been resolved, the first production HL7 information exchange will be scheduled with the newly authorized information exchange partner. Testing consists of several phases:

1. Transport testing
2. HL7 compliance
3. Data Quality

During the testing process the Practice must continue to submit KIDSNET immunization data at least weekly either using data sheets or using an already approved electronic format.

Getting Started:

1. Complete a Registration of Intent:
<http://health.ri.gov/healthinformationtechnology/about/meaningfuluse/immunizations/>

Transport:

2. The Provider must sign an Addendum to the KIDSNET Agreement if data from the EHR or authentication information will be shared with a vendor.
3. KIDSNET will provide the potential information exchange partner with a Sender Id, a Password, and the appropriate URL for testing once a transport method has been identified.

HL7 Compliance:

4. Test messages using real patient data will be sent using the designated transport. Identifiers for MSH-4, MSH-22, RXA-11.4 and ORC-17 will be supplied by KIDSNET.
5. The transmissions will be processed by the test KIDSNET system and compliance with the requirements in RI's Implementation Guide will be assessed.
6. If real patient data does not demonstrate the capacity to message all R, RE, C(R), C(RE) segments, then the Sender will be asked to send test data demonstrating the capacity of messaging the scenario from the Provider's EHR.

Data Quality:

7. Test messages will also be reviewed for data quality. Issues related to coding and correct use of the electronic health record will be addressed.
8. KIDSNET does not consider testing complete until both technical issues are resolved and data is being recorded in the EHR in such a way that quality data can be sent to KIDSNET.
9. When testing is completed, KIDSNET will work with the newly authorized and tested information exchange partner to plan for the start of the production HL7 immunization information exchange.

2. KIDSNET Web Service Operations

Information Exchange Rules

The following are general rules for sending systems:

1. **Always** end each segment with the segment terminator (Only the carriage return character, ASCII hex 0D may be used).
2. If a transmission includes multiple messages, the number of messages must be less than 8,000 and the total immunizations must be less than 18,000. Please contact Jeff Goggin if a larger transmission is needed: jeff.goggin@health.ri.gov
3. Practices are required to report immunizations within one week of vaccine administration. HL7 transmissions should be sent at least that frequently.
4. Transactions sent to KIDSNET will not appear in the database instantly. KIDSNET processes this information in a batch mode periodically during the day.
5. An HL7 acknowledgement (ACK) response will be provided for every HL7 message that is received by KIDSNET. Important detailed information is included in the [ACK response](#) section.
6. Where specified, codes within the HL7 messages **must only** come from the published code sets referenced within this document.

Transport - Web Service Information

HL7 messages may be sent to KIDSNET using a SOAP transport or an HTTPS post transport. Each transmission will be encrypted for security purposes using the industry standard secured socket layer (SSL) protocol. Only authorized partners will be permitted to exchange information.

For more information about how to obtain a sender id and password to send HL7 messages or about the methods to securely upload HL7 immunization information to KIDSNET please contact Jeff Goggin or Kim Salisbury Keith at the Department of Health:

Jeff.Goggin@health.ri.gov, (401) 222-4968

Kim.SalisburyKeith@health.ri.gov, (401) 222-5925

Please note that connectivity over the Internet can fail at any time for a number of reasons. HL7 senders MUST resend a VXU message if an ACK message is not received in response from KIDSNET. Please refer to the [Message Acknowledgement \(ACK\)](#) - KIDSNET Response section for more detail.

SOAP Method (preferred transport)

KIDSNET offers a SOAP transport that implements the [SOAP 1.2 WSDL specification](#) developed by the [Transport Layer Expert Panel](#) of the [CDC EHR-IIS Interoperability Expert Panel Project](#) for the purpose of submitting HL7 immunization messages. This is the preferred

transport method. The specification and reference implementation code in Java and .NET are available from CDC at:

<http://www.cdc.gov/vaccines/programs/iis/interop-proj/index.html>

The SOAP operation in the specification that is used to submit HL7 messages is **submitSingleMessage**. It has the same workflow and uses the same username, password, and message fields as the HTTPS POST method (see below):

Operation: **submitSingleMessage**

Parameter	Input/Output	Data type	Description
username	Input	String	Username supplied by KIDSNET
password	Input	String	Password supplied by KIDSNET
facilityID	Input	String	Not used - Null for KIDSNET
HL7Message	Input	String	HL7 version 2.5.1 intended for KIDSNET
Return	Output	String	HL7 version 2.5.1 response from KIDSNET

HTTPS Post Method

HTTPS Post transport method is also accepted by KIDSNET. HTTPS post transport provides a streamlined method of automating the secure exchange of immunization information.

The following information is required in the HTTPS post:

- 1) **FIELD_USERID** or **USERID**
- 2) **FIELD_PASSWORD** or **PASSWORD**
- 3) **FIELD_MESSAGEDATA** or **MESSAGEDATA** (the HL7 message)

The first two items (i.e. user id and password) and the required Uniform Resource Locator (URL) for the HTTPS post will be supplied by KIDSNET during the initial setup process. The third required field (FIELD_MESSAGEDATA) contains the HL7 messages.

Senders using the SOAP or HTTPS post protocol can choose between two transmission modes.

Real-Time Transmission Mode

In the real-time mode of sending child and immunization information, one HL7 message is created and sent by the practice's EHR as the information is entered and saved or the record locked. This method alleviates the need for a scheduled transmission daily or weekly because each immunization is sent to KIDSNET when it is saved or the record locked.

The real-time HL7 transmission mode allows for an immediate response (i.e. acknowledgement) from KIDSNET notifying the sender about whether the HL7

message was received successfully and whether the message passed the KIDSNET initial parsing and edit routines successfully. It should be noted that the initial KIDSNET edits are preliminary. More detailed editing is performed by the KIDSNET batch back-end matching, deduplication, and load processes throughout the day and therefore information will not appear in the KIDSNET database until processed through these sub-systems.

Batch Transmission Mode

In the batch mode of sending child and immunization information the HL7 messages containing information for multiple children are batched together prior to sending the “batch” to the RI Department of Health.

The batch mode of sending HL7 messages may be used by EHR vendors and their practice customers to send information at a scheduled time during the day or week. For example, immunizations administered for the day are sent each day at 7 PM or immunizations administered for the week are sent once a week on Thursday at 10 PM.

KIDSNET ignores the HL7 batch (BHS) and file header (FHS) segments.

3. Supported HL7 Message Types and Message Structure

KIDSNET currently supports the VXU (Vaccination Update) message and KIDSNET will respond with an HL7 ACK (Acknowledgement). KIDSNET parses the VXU sent by HL7 Data Exchange Partners and if the information is valid, the client and immunization data will be stored in the KIDSNET database.

The corresponding HL7 ACK is used by KIDSNET to acknowledge to the HL7 Data Exchange Partner the results of the KIDSNET system VXU parsing and preliminary editing process.

The CDC IG contains basic descriptions of terms and definitions that are used in both the CDC IG and this guide. To avoid potentially ambiguous situations, the majority of the terms and definitions will not be redefined in this guide. The CDC IG is available using the following link: <http://www.cdc.gov/vaccines/programs/iis/technical-guidance/hl7.html>.

A key attribute to HL7 fields, components, and sub-components is the Usage Code. In the table below are the acceptable Usage Codes used in this implementation guide.

Usage Code	Interpretation	Comment
R	Required	<p>The sending application shall populate all "R" elements with a non-empty value.</p> <p>KIDSNET shall raise an error due to the absence of a required element.</p>
RE	Required but may be empty	<p>The element may be missing from the message, but it must be sent by the sending application if there is relevant data.</p> <p>The sending application should be capable of providing all "RE" elements and will need to demonstrate that capacity during testing. If the sending application has the data for the element, then it must send that element using required values. If the sending application does not have the required data, then that element will be omitted.</p> <p>KIDSNET will process or ignore data contained in the element and will process the message if the element is omitted.</p> <p>KIDSNET will not raise an error if an RE element is missing.</p>
C	Conditional	<p>This usage has an associated condition predicate. This predicate is an attribute within the message. If the predicate is satisfied: the sending application must always send the element.</p> <p>KIDSNET will process or ignore data in the element. An error may be raised if the element is not present.</p> <p>If the predicate is NOT satisfied: the sending application must NOT send the element.</p> <p>KIDSNET may raise an error if the element IS present.</p>

Usage Code	Interpretation	Comment
CE	Conditional but may be empty	<p>This usage has an associated condition predicate. This predicate is an attribute within the message.</p> <p>If the predicate is satisfied: If the sending application has the data for the element, then it must send that element using required values.</p> <p>If the sending application does not have the data required for this element, then the element shall be omitted. The sending application should be capable of sending the element (when the predicate is true) for all 'CE' elements.</p> <p>If the element is present, KIDSNET will process or ignore the values of that element.</p> <p>If the predicate is not satisfied: The sending application shall not populate the element.</p> <p>KIDSNET may raise an application error if the element is present.</p>
O	Optional	<p>This element may be present if specified in this IG.</p> <p>If not specified in this IG, KIDSNET will ignore the element if it is sent. KIDSNET will not raise an error if it receives an unexpected optional element.</p>
X	Not Supported	The element is not supported. Sending applications should not send this element. KIDSNET will ignore this element if present.

In the diagram below, VXU – Unsolicited Vaccination Update Grammar, the following symbols are used.

Concept	Information
[XYZ]	Square Brackets enclose optional segments
{XYZ}	Curly Braces enclose segments which can be repeated
[{XYZ}]	Defines an optional segment which can be repeated.

VXU – Unsolicited Vaccination Update Grammar

The following diagram illustrates the relationships of the segments. Note that in order for a segment to be present in a message, it must be associated with any parent segments. For example, the RXA segment can only be included in a message as a sub-segment to an ORC. Further, the OBX can only be present as a child of an RXA. Finally, a segment that is required and a child of another segment must be present if the parent is present. If the parent is not present, it is NOT permitted.

Note this is a subset of the possible segments in an HL7 VXU message.

Segment	Description	Optionality	Comment
MSH	Message Header	R	Required
PID	Patient Identification	R	Required
[PD1]	Additional Demographics	RE	
[{NK1}]	Next of Kin	RE	
[PV1]	Patient Visit	X	
[PV2]	Patient Visit Additional Information	X	
{		X	<i>Begin Insurance Group</i> KIDSNET HL7 System does not support this grouping
[IN1]	Insurance	X	
}			<i>End Insurance Group</i>
{		R	<i>Begin Order Group</i> Each VXU must contain at least one Order Group
{ORC}	Common Order	R	Each RXA requires exactly one ORC
RXA	Pharmacy Administration	R	Each ORC requires exactly one RXA
[RXR]	Pharmacy Route	RE	
[{OBX}]	Observation / Result	RE	Every RXA segment in a VXU may have zero or more OBX segments. The OBX segment is required when RXA-9 equals “00”.
[NTE]	Notes (Regarding Immunization)	RE	
}			<i>End Order Group</i>

FHS—File Header Segment

If present, the entire FHS segment is ignored by KIDSNET.

FTS—File Trailer Segment

If present, the entire FTS segment is ignored by KIDSNET.

BHS—Batch Header Segment

If present, the entire BHS segment is ignored by KIDSNET.

BTS—Batch Trailer Segment

If present, the entire BTS segment is ignored by KIDSNET.

MSH—Message Header Segment

The Message Header (MSH) segment is required for each message sent. Multiple messages may be sent back-to-back and MSH segments separate multiple messages. Please note this is a subset of the possible fields in an MSH segment.

Message Header Segment (MSH)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	1	ST	[1..1]	[1..1]		Field Separator	R	R
2	4	ST	[1..1]	[1..1]		Encoding Characters	R	R
3		HD	[0..1]	[0..1]	0361	Sending Application	RE	RE
4		HD	[0..1]	[1..1]	Assigned by KIDSNET	Sending Facility	RE	R
5		HD	[0..1]	[0..1]	0361	Receiving Application	RE	RE
6		HD	[0..1]	[0..1]	0362	Receiving Facility	RE	RE
7		TS	[1..1]	[1..1]		Date/Time Of Message	R	R
9	15	MSG	[1..1]	[1..1]		Message Type	R	R
10	20	ST	[1..1]	[1..1]		Message Control ID	R	R
11	3	PT	[1..1]	[1..1]		Processing ID	R	R
12		VID	[1..1]	[1..1]		Version ID	R	R
15	2	ID	[1..1]	[1..1]	0155	Accept Acknowledgement Type	R	R

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
16	2	ID	[1..1]	[1..1]	0155	Application Acknowledgment Type	R	R
22		XON	[0..1]	[1..1]	Assigned by KIDSNET	Sending Responsible Organization	RE	R

MSH Field Definitions

Example:

```
MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^V
XU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>
```

MSH-1 Field Separator (ST) 00001

Definition: This field contains the separator between the segment ID and the first real field, MSH-2-encoding characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. **Required value is |**, (ASCII 124).

MSH-2 Encoding Characters (ST) 00002

Definition: This field contains the four characters in the following order: the component separator, repetition separator, escape character, and subcomponent separator. **Required values are ^~\&** (ASCII 94, 126, 92, and 38, respectively).

MSH-3 Sending Application (HD) 00003

Definition: This field uniquely identifies the sending application. The sending application may be used to indicate the application name of the sending system. A human readable name should be sent as the namespace id.

KIDSNET will not publish a list of IIS applications in user-defined table 0300 and, therefore, will not limit MSH-3.1 values.

The HL7 data exchange partner should value MSH-3.1 with the name of the sending application followed by the software version.

Example: MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||V
XU^V04^VXU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>

MSH-4 Sending Facility (HD) 00004

Definition: This field identifies the organization responsible for the operations of the sending application. Locally defined codes will be assigned by KIDSNET. **This is a required field.**

Example: MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||V
XU^V04^VXU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>

MSH-5 Receiving Application (HD) 00005

Definition: The receiving application may be used to indicate the application name of the receiving system. Please use “KIDSNET_IFL”. IFL stands for (Immunizations for Life).

MSH-6 Receiving Facility (HD) 00006

Definition: The receiving facility may be used to indicate the name of the facility where the data is being sent. Please use “RIHEALTH”

MSH-7 Date/Time Of Message (TS) 00007

Definition: This field contains the date/time that the sending system created the message. The degree of precision must be at least to the minute. **This is a required field.**

Example: MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^VXU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>

MSH-9 Message Type (MSG) 00009

Definition: This field contains the message type, trigger event, and the message structure ID for the message. **This is a required field.**

All three components are required. When sending a VXU, **MSH-9 must contain:** “VXU^V04^VXU_V04”

The initial 2.5.1 implementation of KIDSNET will only accept VXU messages.

Example: MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^VXU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>

Note: The third component, message structure ID (MSH-9.3) was not required in version 2.3.1; however, it is required by the CDC IG for 2.5.1.

MSH-10 Message Control ID (ST) 00010

Definition: This field contains the identifier assigned by the sending application (MSH.3) that uniquely identifies a message instance. This identifier is unique within the scope of the sending facility (MSH.4), sending application (MSH.3), and the YYYYMMDD portion of message date (MSH.7). The receiving system echoes this ID back to the sending system in the Message acknowledgment segment (MSA). The content and format of the data sent in this field is the responsibility of the sender. The receiver returns exactly what was sent in response messages. **This is a required field.**

Example: MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^VXU_V04|20120502RI8814010101|P|2.5.1|||NE|AL|||||RI543763<CR>

Note: KIDSNET interface is synchronous. When the sending system reviews HL7 acknowledgements returned by the receiver, it is important that the sending system check the message control ID value in MSA-2 of the ACK message and match it to the message control ID that was in MSH-10 of the message that was originally sent. If this message control ID is not

received with an acknowledgement code indicating that the message was received successfully the sending system is required to resend valid information. See [ACK, Message Acknowledgement](#) for more information.

MSH-11 Processing ID (PT) 00011

Definition: This field is used to decide whether to process the message as defined in HL7 Application (level 7) Processing rules. **This is a required field.** Use “P” to send data to KIDSNET Production and “T” is used for Testing, all other values will be considered a fatal error. If “T” is sent for a Production message, it will be considered a fatal error. If the value “P” is sent prior to KIDSNET approval for production, the message will not be processed in Production.

The sending facility must make KIDSNET aware of any testing activities.

Example: **MSH**|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^VXU_V04|20120502RI8814010101|P|2.5.1||NE|AL||||RI543763<CR>

MSH-12 Version ID (VID) 00012

Definition: This field contains the identifier of the version of the HL7 messaging standard used in constructing, interpreting, and validating the message. Only the first component need be populated.

This Implementation Guide is for **2.5.1**. **This is a required field.**

Example: **MSH**|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20120502091524||VXU^V04^VXU_V04|20120502RI8814010101|P|2.5.1||NE|AL||||RI543763<CR>

Messages conforming to the specifications in this Guide shall indicate that the version is 2.5.1. Messages indicating an earlier version shall follow the specifications in the 2.3.1 Guide.

MSH-15 Accept Acknowledgment Type (ID) 00015

Definition: This field identifies the conditions under which accept acknowledgments are required to be returned in response to this message. Use “NE” (Never). **This is a required field.**

KIDSNET never sends an (accept) acknowledgement when the message is received; it always sends an (application) acknowledgement once it has processed the message.

MSH-16 Application Acknowledgment Type (ID) 00016

Definition: This field contains the conditions under which application acknowledgments are required to be returned in response to this message.

Allowable values: AL (means always). If "AL" is not received, KIDSNET will still respond with the appropriate ACK for each messages received successfully. **This is a required field.**

MSH-22 Sending Responsible Organization (XON)

Definition: Business organization that originated and is accountable for the content of the message. The locally defined code will be supplied by KIDSNET. **This field is Required.**

PID—Patient Identifier Segment

The PID is used by all applications as the primary means of communicating patient identification information. This segment contains permanent patient identifying and demographic information that, for the most part, is not likely to change frequently. Please note this is a subset of the possible fields in a PID segment.

Patient Identifier Segment (PID)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	4	SI	[0..1]	[0..1]		Set ID - PID	C(R/O)	C(R/O)
3		CX	[1..*]	[1..*]		Patient Identifier List	R	R
5		XPN	[1..*]	[1..*]		Patient Name	R	R
6		XPN	[0..1]	[0..1]		Mother's Maiden Name	RE	RE
7		TS	[1..1]	[1..1]		Date/Time of Birth	R	R
8	1	IS	[0..1]	[0..1]	0001	Administrative Sex	RE	RE
10		CE	[0..*]	[0..*]	0005	Race	RE	RE
11		XAD	[0..*]	[0..*]		Patient Address	RE	RE
13		XTN	[0..*]	[0..*]		Phone Number - Home	RE	RE
15		CE	[0..1]	[0..1]		Primary Language	O	O
22		CE	[0..1]	[0..1]	CDCREC	Ethnic Group	RE	RE
24	1	ID	[0..1]	[0..1]	0136	Multiple Birth Indicator	RE	RE
25	2	NM	[0..1]	[0..1]		Birth Order	C(RE/O)	C(RE/O)
29		TS	[0..1]	[0..1]		Patient Death Date and Time	C(RE/X)	C(RE/X)
30	1	ID	[0..1]	[0..1]	0136	Patient Death Indicator	RE	RE

PID Field Definitions

PID-1 Set ID - PID (SI) 00104

Definition: This field contains the number that identifies this transaction. For VXU, the value will always be 1, since there could only be 1 PID segment for each patient.

PID-3 Patient Identifier List (CX) 00106

Definition: This field contains the list of identifiers (one or more) used by the healthcare facility to uniquely identify a patient (e.g., medical record number, billing number, birth registry, national unique individual identifier, etc.). **This is a required field. KIDSNET will only utilize the medical record number.**

Hospitals **must** use the immunized patient's medical record number.

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^
White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^PH^^^401^555121
2~^ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^En
glish^ISO639||||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-5 Patient Name (XPN) 00108

Definition: This field contains the names of the patient, the primary or legal name of the patient is reported first. Therefore, the name type code in this field should be "L - Legal". **This is a required field.**

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR^^^L|SMITH^MARTHA^G|20120227|M||2106
-3^White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^PH^^^401^5551
212~^ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^E
nglish^ISO639||||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-6 Mother's Maiden Name (XPN) 00109

Definition: This field contains the family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name.

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^W
hite^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^PH^^^401^5551212~^
ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^Englis
h^ISO639||||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-7 Date/Time of Birth (TS) 00110

Definition: This field contains the patient's date and time of birth. **This is a required field.**

Conformance Statement:

IZ-26: PID-7 (birth date) SHALL be accurate at least to the day. (YYYYMMDD)

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^
White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^PH^^^401^555121
2~^ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^En
glish^ISO639||||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-8 Administrative Sex (IS) 00111

Definition: This field contains the patient's sex.

HL7 Table 001-Sex

VALUE (PID-8)	DESCRIPTION
F	Female
M	Male
U	Unknown/Undifferentiated

PID-10 Race (CE) 00113

Definition: This field refers to the patient's race. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes.

The first triplet is to be used for the alpha code. The second triplet of the CE data type for race (alternate identifier, alternate text, and name of alternate coding system) should be used for governmentally assigned numeric codes (####-#).

The **HL7 Table 0005 - Race** table is included for reference.

US Race Codes	Description
1002-5	American Indian or Alaska Native
2028-9	Asian
2076-8	Native Hawaiian or Other Pacific Islander
2054-5	Black or African-American
2106-3	White
2131-1	Other Race
<empty field>	Unknown/undetermined

Example:

```
PID|1||45999^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^W
hite^HL70005|127 W STATE ST^PROVIDENCE^RI^12501^M||^PRN^PH^401^5551212~
^ORN^CP^401^6663434~^NET^INTERNET^georgepatient@freeemail.com||ENG^Engli
sh^ISO639|||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-11 Patient Address (XAD) 00114

Definition: This field contains the mailing address of the patient. Address type codes are defined by HL7 Table 0190 - Address Type ([see CDC v2.5.1 IG Appendix B](#)). Multiple addresses for the same person may be sent in the following sequence: The primary mailing address must be sent first in the sequence; if the home address is different than the mailing address, then a repeat delimiter must be sent in the first sequence followed by the home address. . KIDSNET utilizes addresses both for mailing and for home visiting.

KIDSNET expects the home address in the second sequence if it is different than the mailing address. Home address indicates where the patient lives. Recording of the Birth State uses the BDL, birth delivery location code.

Subset of HL7 Table 0190 – Address Type

VALUE (PID-11)	DESCRIPTION
M	Mailing
H	Home
BDL	Birth Delivery Location

Example with Mailing Address and different Home Address:

```
PID|1||45999^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^White^HL70005|127 W STATE ST^PROVIDENCE^RI^12501^M~14 S 10th ST^PROVIDENCE^RI^12501^H||^PRN^PH^^401^5551212~^ORN^CP^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^English^ISO639|||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

Example with the same Mailing Address and Home Address:

```
PID|1||45999^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^White^HL70005|127 W STATE ST^PROVIDENCE^RI^12501^M||^PRN^PH^^401^5551212~^ORN^CP^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^English^ISO639|||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-13 Phone Number - Home (XTN) 00116

Definition: This field contains the patient's personal phone numbers. All personal phone numbers for the patient are sent in the following sequence. The first sequence is considered the primary number (for backward compatibility). If the primary number is not sent, then a repeat delimiter is sent in the first sequence. Each type of telecommunication shall be in its own repetition. For example, if a person has a phone number and an email address, they shall each have a repetition. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

Only one item is allowed per repetition. The following example shows the primary telephone number in the first repetition, a cell phone number in the second repetition, and an email address in the third repetition. At a minimum, one telephone number should be sent and an email address is highly desired.

Subset of HL7 Table 0201– Telecommunication Use Code

VALUE (PID-13.2)	DESCRIPTION
PRN	Primary residence number
ORN	Other residence number
NET	Network (email address)

Subset of HL7 Table 0202– Telecommunication Equipment Type

VALUE (PID-13.3)	DESCRIPTION
PH	Telephone
CP	Cellular Phone
INTERNET	Internet Address Only if telecommunication code is NET

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||2106-3^W
hite^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^PH^^^401^5551212~
^ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@freemail.com||ENG^Engli
sh^ISO639|||||2135-2^Hispanic or Latino^CDCREC||Y|2|<CR>
```

PID-15 Primary Language

Definition: This field contains the patient's primary language. Listed below are the most common primary language codes found in KIDSNET from ISO table 639.

Primary Language Codes - PID-15 – ISO Table 639:

Description	ISO 639-2 HL7 CODE
ENGLISH	eng
SPANISH	spa
FRENCH	fre
CHINESE	chi
ITALIAN	ita
PORTUGUESE	por
HMONG	hmn
CAMBODIAN (KHMER)	khm
HAITIAN CREOLE	hat
LAOTIAN	lao
RUSSIAN	rus

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||
2106-3^White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^P
H^^^401^5551212~^ORN^CP^^^401^6663434~^NET^INTERNET^georgepatient@fre
email.com||ENG^English^ISO639|||||2135-2^Hispanic or
```

PID-22 Ethnic Group (CE) 00125

Definition: This field further defines the patient's ancestry.

Ethnic Group: PID-22 CDCREC US ethnicity codes

VALUE (PID-22.1)	DESCRIPTION (PID-22.2)
2135-2	Hispanic or Latino
2186-5	not Hispanic or Latino

Example:

```
PID|1||45999^^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||
2106-3^White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^P
H^^^401^5551212~^ORN^CP^^^401^6663434~^NET^INTERNET^ georgepatient@fr
eemail.com||ENG^English^ISO639|||||2135-2^Hispanic or
Latino^CDCREC||Y|2|<CR>
```

PID-24 Multiple Birth Indicator (ID) 00127

Definition: This field indicates whether the patient was part of a multiple birth. Yes/No Indicator for valid values.

Y the patient was part of a multiple birth
N the patient was a single birth
Empty multiple birth status is undetermined.

Example:

```
PID|1||45999^^^MR||PATIENT^GEORGE^M^JR|SMITH^MARTHA^G|20120227|M||  
2106-3^White^HL70005|127 W STATE ST^^PROVIDENCE^RI^12501^^M||^PRN^P  
H^^401^5551212~^ORN^CP^^401^6663434~^NET^INTERNET^georgepatient@fre  
eemail.com||ENG^English^ISO639|||||2135-2^Hispanic or  
Latino^CDCREC||☒|2|<CR>
```

PID-25 Birth Order (NM) 00128

Definition: When a patient was part of a multiple birth, a value (number) indicating the patient's birth order is entered in this field. If PID-24 is populated, then this field should be populated with 1 for the first child born and 2 for the second.

PID-29 Patient Death Date and Time (TS) 00740

Definition: This field contains the date and time at which the patient death occurred and is required if PID-30 is valued "Y".

PID-30 Patient Death Indicator (ID) 00741

Definition: This field indicates whether the patient is deceased. Yes/no Indicator for valid values.

Y the patient is deceased
N the patient is not deceased
Empty status is undetermined

PD1—Patient Demographic Segment

Usage: (RE) - Required but can be Empty - Every PID segment in a VXU may have one or less PD1 segment. See CDC Implementation Guide.

If present, the entire PD1 segment is ignored by KIDSNET at this time.

There are three primary uses for the Patient Demographic (PD1) segment in Immunization Messages. These include indicating whether the person wants his/her data protected (PD1-12 and PD1-13), whether the person wants to receive recall/reminder notices (PD1-11), and the person's current status in the registry (PD1-16 and PD1-17). However, these uses are not currently supported by KIDSNET.

PV1—Patient Visit Segment

Usage: (O) Optional - If present, the entire PV1 segment is ignored by KIDSNET.

The PV1 segment is used to convey visit specific information. The primary use in immunization messages in previous releases was to carry information about the client's eligibility status. VFC eligibility is now recorded in the OBX segment.

NK1—Next of Kin Segment

The NK1 segment contains information about the patient's other related parties. Any associated parties may be identified. Utilizing NK1-1 - set ID, multiple NK1 segments can be sent to patient accounts. That is, each subsequent NK1 increments the previous set ID by 1. Therefore, if three NK1 were sent in one message, the first would have a set id of 1, the second would have 2 and the third would have 3.

If information is available to send in this Segment then it must be sent (RE). KIDSNET prefers that the Mother's information be sent if it is available. Please note that this is a subset of the possible fields in an NK1 segment.

Next of Kin Segment (NK1)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	4	SI	[1..1]	[1..1]		Set ID - NK1	R	R
2		XPN	[1..*]	[1..*]		Name	R	R
3		CE	[1..1]	[1..1]	0063	Relationship	R	R
4		XAD	[0..*]	[0..*]		Address	RE	RE
5		XTN	[0..*]	[0..*]		Phone Number	RE	RE
16		TS	[0..1]	[0..1]		Date/Time of Birth	O	O
20		CE	[0..1]	[0..1]	ISO0639	Primary Language	O	O

NK1 Field Definitions

NK1-1 Set ID - NK1 (SI) 00190

Definition: This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc.

NK1-2 Name (XPN) 00191

Definition: This field contains the name of the next of kin or associated party. Multiple names for the same person are allowed, but the legal name must be sent in the first sequence. Therefore, the name type code in this field should be "L - Legal". **This is a required field.**

Example: **NK1**|1|SMITH^MARTHA^G^^^^L|MTH^Mother^HL70063|127 W STATE S
T^^PROVIDENCE^RI^12501^^M|^PRN^PH^^^212^5218118|||||||19830210|
|||ENG^English^ISO639|<CR>

NK1-3 Relationship (CE) 00192

Definition: This field contains the actual personal relationship that the next of kin/associated party has to the patient. **This is a required field.**

KIDSNET prefers that the mother's information is sent in NK1-3. Only the values listed in the table below are stored in KIDSNET.

Next of Kin Relationship: NK1-3 (Subset of HL7 Table 0063)

VALUE (NK1-3.1)	DESCRIPTION (NK1-3.2)
MTH	Mother
FTH	Father
PAR	Parent
SEL	Self
GRD	Guardian

Other valid relationship codes are in HL7 User-defined Table 0063 and are listed in the CDC Guide.

Example: **NK1**|1|SMITH^MARTHA^G^^^^L|MTH^Mother^HL70063|127 W
STATE ST^^PROVIDENCE^RI^12501^^M|^PRN^PH^^^212^5218118|||||||19
830210|||||ENG^English^ISO639|<CR>

NK1-4 Address (XAD) 00193

Definition: This field contains the address of the next of kin/associated party. Multiple addresses are allowed for the same person. The mailing address must be sent in the first sequence. If the mailing address is not sent, then the repeat delimiter must be sent in the first sequence.

KIDSNET will accept the home address in the second sequence. Home address indicates where the next-of-kin lives and should be sent if different from the mailing address.

Subset of HL7 Table 0190 – Address Type

VALUE (PID-11)	DESCRIPTION
M	Mailing
H	Home

Example with Mailing Address and different Home Address:

NK1|1|SMITH^MARTHA^G^^^^L|MTH^Mother^HL70063|127 W STATE ST^^PROVID
ENCE^RI^12501^^M~14 S 10th ST^^PROVIDENCE^RI^12501^^H|^PRN^PH^^^212^
5218118|||||||19830210|||||ENG^English^ISO639|<CR>

Example with no Mailing Address but a Home Address:

NK1|1|SMITH^MARTHA^G^^^^L|MTH^Mother^HL70063|~14 S 10th ST^^PROVIDEN
CE^RI^12501^^H|^PRN^PH^^^212^5218118|||||||19830210|||||ENG^Engl
ish^ISO639|<CR>

NK1-5 Phone Number (XTN) 00194

Definition: This field contains the telephone number of the next of kin/associated party. Multiple phone numbers are allowed for the same person. The primary telephone number must be sent in the first sequence. If the primary telephone number is not sent, then the repeat delimiter must be sent in the first sequence. Refer to HL7 Table 0201 - Telecommunication Use Code and HL7 Table 0202 - Telecommunication Equipment Type for valid values.

The first instance shall be the primary phone number. The following example shows the primary telephone number in the first repetition, a cell phone number in the second repetition, and an email address in the third repetition. An email address is highly desired.

Subset of HL7 Table 0201– Telecommunication Use Code

VALUE (PID-13.2)	DESCRIPTION
PRN	Primary residence number
ORN	Other residence number
NET	Network (email address)

Subset of HL7 Table 0202– Telecommunication Equipment Type

VALUE (PID-13.3)	DESCRIPTION
PH	Telephone
CP	Cellular Phone
INTERNET	Internet Address Only if telecommunication code is NET

```
Example: NK1|1|SMITH^MARTHA^G^^^L|MTH^Mother^HL70063|127 W
STATE ST^^PROVIDENCE^RI^12501^^M|^PRN^PH^^^212^5218118~^ORN^CP^^^40
1^2349696~^NET^INTERNET^annmom@freemail.com|||||||19830210||||
ENG^English^ISO639|<CR>
```

NK1-16 Date/Time of Birth (TS) 00110

Definition: This is the data of birth of the next of kin. KIDSNET strongly encourages that the next-of-kin date of birth be sent. It assists in the unique identification of the patient.

```
Example: NK1|1|SMITH^MARTHA^G^^^L|MTH^Mother^HL70063|127 W
STATE ST^^PROVIDENCE^RI^12501^^M|^PRN^PH^^^212^5218118~^ORN^CP^^^40
1^2349696~^NET^INTERNET^annmom@freemail.com|||||||19830210||||
ENG^English^ISO639|<CR>
```

NK1-20 Primary Language

Definition: This field contains the next-of-kin's primary language. Listed below are language utilized in KIDSNET from ISO table 639.

Codes NK1-20 ISO Table 639 subset:

Description	ISO 639-2 HL7 CODE
ENGLISH	eng
SPANISH	spa
FRENCH	fre
CHINESE	chi
ITALIAN	ita
PORTUGUESE	por
HMONG	hmn
CAMBODIAN (KHMER)	khm
HAITIAN CREOLE	hat
LAOTIAN	lao
RUSSIAN	rus

ORC—Order Request Segment

The Common Order segment (ORC) is used to transmit fields that are common to all orders (all types of services that are requested). While not all immunizations recorded in an immunization message are able to be associated with an order, each RXA must be associated with one ORC, based on HL7 2.5.1 standard.

If the RXA segment is coded with “No vaccine administered”, then the ORC-3 shall be 9999 and ORC-17 Entering Organization shall be filled with the assigned KIDSNET Identifier.

Example: ORC|RE|9999|||||||||||||RI2050<CR>

This segment is required and if it is missing or required fields are missing, the system shall reject that particular segment along with the associated RXA, RXR, and OBX segments, but still process the rest of the message. If the message does not have at least one valid ORC segment, then the entire message will be rejected. Please note that this is a subset of the possible fields in an ORC segment.

Common Order Segment (ORC)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	2	ID	[1..1]	[1..1]	0119	Order Control	R	R
2		EI	[0..1]	[0..1]		Placer Order Number	RE	RE
3		EI	[1..1]	[1..1]		Filler Order Number	R	R
10		XCN	[0..1]	[0..1]		Entered By	RE	RE
12		XCN	[0..1]	[0..1]		Ordering Provider	RE	RE
17		CE	[0..1]	[0..1]		Entering Organization	RE	C(R/RE)

ORC Field Definitions

ORC-1 Order Control (ID) 00215

Definition: Determines the function of the order segment.

The value for VXU shall be RE (Observations to follow).

ORC-2 Placer Order Number (EI) 00216

Definition: The placer order number is used to identify uniquely this order among all orders sent by a provider organization.

ORC-2 is a system identifier assigned by the placer software application. The Placer Order Number and the Filler Order Number are essentially foreign keys exchanged between applications for uniquely identifying orders and the associated results across applications. In the case where the ordering provider organization is not known, the sending system may leave this field empty.

ORC-3 Filler Order Number (EI) 00217

Definition: The filler order number is used to identify uniquely this order among all orders sent by a provider organization that filled the order.

This shall be the unique identifier of the sending system in a given transaction. In the case where system A sends the record to system B and system B then forwards to system C, system B will send its own unique identifier.

Use of this foreign key will allow the initiating system to identify accurately the previously sent immunization record, facilitating update or deletion of that record.

In the case where a historic immunization is being recorded (i.e. from an immunization card), the sending system SHALL assign an identifier as if it were an immunization administered by a provider associated with the provider organization owning the sending system. In the case where an RXA is conveying information about an immunization that was not given (e.g. refusal) the filler order number shall be 9999.

This field is required and it indicates the sending system's unique id for this vaccination. Every vaccination should be assigned an id unique to the sending system. In this way, if an update is made to the vaccination, the receiving side (KIDSNET) can determine which vaccination to update.

Example:

```
ORC|RE|I123455|987655|||||RN34521^Vaccinator^Kathy^S^^^RN^^RIA||MD12345^Jones^Thomas^P.^^^MD^^RIA^^^^|||RI2050<CR>
```

ORC-10 Entered By (XCN) 00224

Definition: This identifies the individual that entered this particular order. It may be used in conjunction with an RXA to indicate who recorded a particular immunization.

ORC-12 Ordering Provider (XCN) 00226

Definition: This field contains the identity of the person who is responsible for creating the request (i.e., ordering physician). In the case where this segment is associated with a historic immunization record and the ordering provider is not known, then this field should not be populated.

When reporting new immunizations the Ordering Provider should be sent in ORC-12, if known, and valued as follows:

- The ID Number (ORC-12.1) should contain the provider's license number, which must not exceed 12 characters.
- The Provider's Family/Last Name (ORC-12.2) and Given/First Name (ORC-12.3) must each be 25 characters or less.
- Assigning Authority (ORC-12.9) should contain the value "RIA".

License Number Example:

```
ORC|RE|I123455|987655|||||RN34521^Vaccinator^Kathy^S^^^RN^^RIA||MD12345^Jones^Thomas^P.^^^MD^^RIA^^^^|||RI2050<CR>
```

ORC-17 Entering Organization (CE)

Definition: This field identifies the organization that the enterer belonged to at the time he/she enters/maintains the order, such as medical group or department. The person who entered the request is defined in ORC-10 -entered by.

If RXA-9 (Administration Notes) does **not** contain "00" (New Immunization Record) it means that the immunization is being recorded for historical purposes. In this case, the ORC-17 field shall be used to send the provider organization that entered the immunization. The assigned KIDSNET identifier shall be used.

The assigned KIDSNET identifier shall also be used in ORC-17 to show the entering organization when RXA-18 Substance/Treatment Refusal Reason is filled or for any ORC where a vaccine was not administered.

Entering Organization Example:

```
ORC|RE|I123455|987655|||||RN34521^Vaccinator^Kathy^S^^^RN^RIA|MD12345^Jones^Th  
omas^P.^^^MD^^RIA^^^| |||RI2050<CR>
```

RXA-- Pharmacy/Treatment Administration Segment

The RXA segment carries pharmacy administration data. It is a child of an ORC segment. Every RXA must be associated with (preceded by) an ORC; otherwise, the message will be rejected. Please note that this is a subset of the possible fields in an RXA segment.

Each RXA must be associated with one ORC, based on HL7 2.5.1 standard; this is a change from the 2.3.1 standard. In the 2.3.1 standard the ORC is optional and, in fact, rarely included in a VXU.

Only one RXA segment is required and permitted for each ORC segment. If no vaccine has been administered, the RXA segment should follow this format:

```
RXA|0|1|20090412|20090412|998^No vaccine administered^CVX|999
```

The RXA segment is required and repeatable, and if required fields are absent or are not formatted correctly, KIDSNET will reject that RXA segment. The rest of the message will continue to be processed including any other RXA segments. The message will be rejected if there is not at least one valid RXA segment.

Pharmacy/Treatment Administration (RXA)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	4	NM	[1..1]	[1..1]		Give Sub-ID Counter	R	R
2	4	NM	[1..1]	[1..1]		Administration Sub-ID Counter	R	R
3		TS	[1..1]	[1..1]		Date/Time Start of Administration	R	R
4		TS	[0..1]	[0..1]		Date/Time End of Administration	RE	RE
5		CE	[1..1]	[1..1]	0292	Administered Code	R	R
6	20	NM	[1..1]	[1..1]		Administered Amount	R	R
7		CE	[0..1]	[0..1]		Administered Units	C(R/O)	C(R/O)
9		CE	[0..*]	[1..1]	NIP 001	Administration Notes	C(R/O)	R
10		XCN	[0..1]	[0..1]		Administering Provider	C(RE/O)	C(RE/O)
11		LA2	[0..1]	[0..1]		Administered-at Location	C(RE/O)	C(R/O)
15	20	ST	[0..*]	[0..1]		Substance Lot Number	C(RE/O)	C(R/O)
16		TS	[0..1]	[0..1]		Substance Expiration Date	C(RE/O)	C(R/O)
17		CE	[0..*]	[0..*]	0227	Substance Manufacturer Name	C(RE/O)	C(R/O)
18		CE	[0..*]	[0..*]		Substance/Treatment Refusal Reason	C(R/X)	C(R/X)
20	2	ID	[0..1]	[0..1]	0322	Completion Status	RE	RE
21	2	ID	[0..1]	[0..1]	0323	Action Code - RXA	RE	RE

RXA Field Definitions

RXA-1 Give Sub-ID Counter (NM) 00342

Definition: This field is used to match an RXA and RXG. Not a function under IIS. Constrain to 0 (zero).

Although required by the CDC IG, this field is ignored by KIDSNET and will not be reported as an error if omitted.

RXA-2 Administration Sub-ID Counter (NM) 00344

Definition: This field is used to track multiple RXA under an ORC. Since each ORC has only one RXA in immunization messages, constrain to 1. This should not be used for indicating dose number, which belongs in an OBX.

RXA-3 Date/Time Start of Administration (TS) 00345

Definition: The date this vaccination occurred. In the case of refusal or deferral, this is the date that the refusal or deferral was recorded.

It is important that this date be the actual date the vaccination was given and not the date that it was ordered, recorded, or billed.

This is a required field. Format: YYYYMMDD

Note: The entire message will be rejected if a vaccination is recorded in the future, after the indicated death date, or before the patient's date of birth.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|20130301|PFR^Pfizer, Inc.^MVX||CP|A<CR>

RXA-4 Date/Time End of Administration (If Applies) (TS) 00346

Definition: In the context of immunization, this is equivalent to the Start date/time. If populated it should be = RXA-3. If empty, the date/time of *RXA-3-Date/Time Start of Administration* is assumed.

RXA-5 Administered Code (CE) 00347

Definition: This field identifies the medical substance administered. If the substance administered is a vaccine, CVX codes should be used in the first triplet to code this field (see HL7 Table 0292 - Codes for vaccines administered). The second set of three components could be used to represent the same vaccine using a different coding system, such as Current Procedural Terminology (CPT). The use of CVX codes are required by KIDSNET and for Meaningful Use. CVX codes indicating unspecified formulations of vaccines (NOS) are not acceptable if RXA-9 is coded "00" new immunization. CVX code is the strongly preferred code system. **This is a required field.**

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|20130301|PFR^Pfizer, Inc.^MVX||CP|A<CR>

CVX codes are maintained by the CDC's National Center of Immunization and Respiratory Diseases (NCIRD) and can be found at the CDC website:

<http://www2a.cdc.gov/vaccines/iis/iisstandards/vaccines.asp?rpt=cvx>

New codes are added several times a year. CDC offers an email service that sends updates when new CVX codes are added. Information about this service is available on the website listed above. It is critical to keep code sets up-to-date in order to appropriately report vaccinations. Steps should be taken to ensure that someone is receiving these emails and keeping the code sets up-to-date.

RXA-6 Administered Amount (NM) 00348

Definition: This field records the amount of pharmaceutical administered. The units are expressed in the next field, RXA-7.

The amount of vaccine that was given. This should be expressed in milliliters (ML). The amount should be placed here and the units in RXA-7. Do not put the units in this field. 999 is used if the volume is not recorded.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|20130301|PFR^Pfinder, Inc.^MVX|||CP|A<CR>

RXA-7 Administered units (CE) 00349

Definition: This field is conditional because it is required if the administered amount code does not imply units. This field must be in simple units that reflect the actual quantity of the substance administered. It does not include compound units. This field is not required if the previous field is populated with 999.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|20130301|PFR^Pfinder, Inc.^MVX|||CP|A<CR>

RXA-9 Administration Notes (CE) 00351

Definition: This field is used to indicate whether this immunization record is based on a historical record or was given by the reporting provider. It should contain the information source (see NIP-defined Table 001 - Immunization Information Source). The first component shall contain the code, the second the free text and the third shall contain the name of the code system. (NIP001) Sending systems should be able to send this information. **This is a required field for KIDSNET**

The primary use of this field is to convey if this immunization record is based on a historical record or was given by the provider recording the immunization. All systems should be able to support this use.

Information source is an NVAC core data element. It speaks to the reliability of the immunization record. IIS rely on this information.

CDC-defined NIP001 - Immunization information source

Code	Definition
00	New immunization Record
01	Historical information-source unspecified
02	Historical information, from other provider
03	Historical information, from parent's written record
04	Historical information, from parent's recall
05	Historical information, from other registry
06	Historical information, birth certificate
07	Historical information, from school record
08	Historical information, from public agency

NOTE: All new immunizations that are administered in your provider office should be recorded as "00" to ensure that the record is correctly associated with your organization in KIDSNET.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||**00^New immunization record^NIP001**|^Jones^Stephanie^D^RN|^RI2050||||F1655|20130301|PFR^Pfizer, Inc.^MVX|||CP|A<CR>

RXA-10 Administering Provider (XCN) 00352

Definition: This field is intended to contain the name and provider ID of the person physically administering the pharmaceutical.

Note that previous Implementation Guide (2.3.1) overloaded this field by using local codes to indicate administering provider, ordering provider and recording provider. This is a misuse of this field and not supported in this Guide. The ordering and entering providers are indicated in the associated ORC segment.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||**00^New immunization record^NIP001**|^**Jones^Stephanie^D^RN**|^RI2050||||F1655|20130301|PFR^Pfizer, Inc.^MVX|||CP|A<CR>

RXA-11 Administered-at Location (LA2) 00353

Definition: The name and address of the facility that administered the immunization.

This field is used to report the facility that administered. **A KIDSNET-issued facility code is required in RXA-11.4.1 when reporting a new immunization record (RXA-9).** The KIDSNET assigned Facility Id is provided during the testing process. For histories, this field is Optional. If historical, do not fill this field if the Administered at Location is different than the Entering Organization (ORC-17).

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||**00^New immunization record^NIP001**|^Jones^Stephanie^D^RN|^**RI2050**||||F1655|20130301|PFR^Pfizer, Inc.^MVX|||CP|A<CR>

RXA-15 Substance Lot Number (ST) 01129

Definition: This field contains the lot number of the medical substance administered. It may remain empty if the dose is from a historical record.

The Lot Number cannot exceed 25 characters. KIDSNET will only read (store) the first lot number for each immunization. Some vaccines have more than one lot number associated with them. The first lot number should be the lot number on the outer carton for the vaccine which is recorded on the shipping log.

Example: **RXA**|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||**F1655**
|20130301|PFR^Pfizer, Inc.^MVX|||CP|A<CR>

This field **is required** when the value in RXA-9 is valued "00" New immunization record.

RXA-16 Substance Expiration Date (TS) 01130

Definition: This field contains the expiration date of the medical substance administered. It may remain empty if the dose is from a historical record. If the lot number is populated, this field should be valued.

Note: Vaccine expiration date does not always have a "day" component; therefore, such a date may be transmitted as YYYYMM.

Example:

RXA|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|**20130301**
|PFR^Pfizer, Inc.^MVX|||CP|A<CR>

RXR|SC^subcutaneous^HL70162|RT^right thigh^HL70163<CR>

This field **is required** if RXA-15 (lot number) is valued.

RXA-17 Substance Manufacturer Name (CE) 01131

Definition: This field contains the manufacturer of the medical substance administered and is required unless the dose is from a historical record.

When sending the manufacturer, RXA-17.1 must contain the corresponding HL7 MVX code (from CDC <http://www2a.cdc.gov/vaccines/IIS/IISStandards/vaccines.asp?rpt=mvx>. RXA-17.3 should contain the code type (MVX).

OTH and UNK will not be accepted by KIDSNET as valid codes. Manufacturer codes must be recorded for all administered vaccines and should be omitted for historical vaccines when unknown.

This field is required if RXA-9.1 is "00" (New immunization Record). Example:

RXA|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050|||F1655|20130301
|**PFR^Pfizer, Inc.^MVX**|||CP|A<CR>

RXA-18 Substance/Treatment Refusal Reason (CE) 01136

Definition: This field contains the reason the patient refused the medical substance/treatment. Any entry in the field indicates that the patient did not take the substance. If this field is populated RXA-20, Completion Status shall be populated with RE.

There are several components to messaging a refusal. The refusal reason is indicated in RXA-18. The Completion Status in RXA-20 indicates that the vaccine was not given. The amount given should be 999. The following example illustrates how to accomplish this.

```
ORC|RE||197027^DCS|||||^Clerk^Myron|||||RI2050<CR>
RXA|0|1|20091010||107^DTAP-NOS^CVX|999|||||||00^Parental
decision^NIP002||RE<CR>
```

This example shows that on 10/10/2009 this client's parent refused to have the child receive a DTAP immunization. Note that the ORC is still required. Filler Order Number is still required, but meaningless. ORC-17 shall show the entering Organization using the KIDSNET assigned identifier.

Note that RXA-2 is NOT used to indicate dose number, as it had in the past Guide. It is constrained to have a value of 1.

CDC-defined NIP002 - Substance refusal reason

Value	Description
00	Parental decision
01	Religious exemption
02	Other (must add text component of the CE field with description)
03	Patient decision

RXA-20 Completion Status (ID) 01223

Definition: This field indicates if the dose was successfully given. It must be populated with RE if RXA-18 is populated with NA. If a dose was not completely administered or if the dose were not potent this field may be used to label the immunization. If this RXA has a CVX of 998 (no vaccine administered) then this shall be populated with NA.

If this field is not populated, it is assumed to be CP or complete.

```
Example: RXA|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immuniza
tion record^NIP001|^Jones^Stephanie^D^RN|^^RI2050|||F1655|20130301|PFR^Pfizer
, Inc.^MVX|||CF|A<CR>
```

HL7-defined Table 0322 - Completion status

Value	Description
CP	Complete
RE	Refused
NA	Not Administered
PA	Partially Administered

RXA-21 Action Code – RXA (ID) 01224

Definition: This field indicates the action expected by the sending system. It can facilitate update or deletion of immunization records. This field has a usage of RE. If it is left empty, then receiving systems should assume that the action code is A.

At this time, KN is only processing “adds. Deletes may be completed by mailing the information to KIDSNET or by contacting AJ Lizarda at 401-222-5986.

Example: **RXA**|0|1|**20120411**|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immunization record^NIP001|^Jones^Stephanie^D^RN|^^^RI2050||||F1655|20130301|PFR^Pfizer, Inc.^MVX|||CP|**A**<CR>

RXR-- Pharmacy/Treatment Route Segment

The Pharmacy/Treatment Route segment contains the alternative combination of route, site, administration device, and administration method that are prescribed as they apply to a particular order. Please note that this is a subset of the possible fields in an RXR segment.

Pharmacy/Treatment Route (RXR)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1		CE	[1..1]	[1..1]	0162	Route	R	R
2		CWE	[0..1]	[0..1]	0163	Administration Site	RE	RE

RXR Field Definitions**RXR-1 Route (CE) 00309**

Definition: This field is the route of administration.

Valid codes are either the FDA Code or the HL70162

FDA Code RXR-1.1	HL70162 Table Values RXR-1.1	Description	Definition
C38238	ID	Intradermal	Within or introduced between the layers of the skin
C28161	IM	Intramuscular	Within or into the substance of a muscle
C38284	NS	Nasal	Given by nose
C38276	IV	Intravenous	Administered into a vein
C38288	PO	Oral	Administered by mouth
	OTH	Other/Miscellaneous	
C38676		Percutaneous	Made, done, or effected through the skin.
C38299	SC	Subcutaneous	Under the skin or between skin and muscles.
C38305	TD	Transdermal	Describes something, especially a drug, that is introduced into the body through the skin

Example 1:

RXR|SC^subcutaneous^HL70162|RT^right thigh^HL70163<CR>

Example 2 (Note contains both the FDA and HL70162 codes)

RXR|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|RT^right thigh^HL70163<CR>

RXR-2 Administration Site (CWE) 00310

Definition: This field contains the site of the administration route.

The site of administration shall be blank if RXR-1 is "PO" (Oral) or "NS" (Nasal).

For a full set of valid codes refer to HL7 Table 0163.

Subset of Code Table HL70163

VALUE (RXR-2.1)	DESCRIPTION (RXR-2.2)
LT	Left Thigh
LA	Left Upper Arm
LD	Left Deltoid
LG	Left Gluteous Medius
LVL	Left Vastus Lateralis
LLFA	Left Lower Forearm

RA	Right Upper Arm
RT	Right Thigh
RVL	Right Vastus Lateralis
RG	Right Gluteous Medius
RD	Right Deltoid
RLFA	Right Lower Forearm

Example: RXR|SC^subcutaneous^HL70162|**RT^right thigh^HL70163**<CR>

OBX—Observation Result Segment

The observation result segment has many uses. It carries observations about the object of its parent segment. In the VXU it is associated with the RXA or immunization record. The basic format is a question (OBX-3) and an answer (OBX-5).

For VXU messages, when the vaccine is administered (RXA-9 contains 00), HL7 Data Exchange Partner shall send immunization-level Vaccines for Children (VFC) eligibility and Vaccine Information Sheet (VIS) information in the OBX segment. [Examples](#) follow the field definitions.

The OBX Segment is also used for client specific conditions (Evidence of Immunity, Contraindications, Reactions). For more information about sending client specific conditions please refer to [Appendix A](#). Please note that this is a subset of the possible fields in an OBX segment.

Observation Segment (OBX)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Sets	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	4	SI	[1..1]	[1..1]		Set ID – OBX	R	R
2	2	ID	[1..1]	[1..1]	HL70125	Value Type	R	R
3		CE	[1..1]	[1..1]	NIP003	Observation Identifier	R	R
4	20	ST	[1..1]	[1..1]		Observation Sub-ID	R	R
5		varies ¹	[1..1]	[1..1]		Observation Value	R	R
6		CE	[0..1]	[0..1]		Units	C(R/O)	C(R/O)
11	1	ID	[1..1]	[1..1]	HL70085	Observation Result Status	R	R
14		TS	[0..1]	[0..1]		Date/Time of the Observation	RE	RE
17		CE	[0..1]	[0..1]		Observation Method	C(R/O)	C(R/O)

The length of the observation field is variable, depending upon value type. See *OBX-2 value type*.

OBX Field Definitions

OBX-1 Set ID - OBX (SI) 00569

Definition: This field contains the sequence number. The first instance shall be set to 1 and each subsequent instance shall be the next number in sequence.

OBX-2 Value Type (ID) 00570

Definition: This field contains the format of the observation value in OBX. If the value is CE then the result must be a coded entry. . Constrained to CE, NM,ST, DT,ID, TS.

OBX-3 Observation Identifier (CE) 00571

Definition: This field contains a unique identifier for the observation. The format is that of the Coded Element (CE). Example: |64994-7^Vaccine funding program eligibility category^LN|.

In most systems the identifier will point to a master observation table that will provide other attributes of the observation that may be used by the receiving system to process the observations it receives. This may be thought of as a question that the observation answers. In the example above, the question is "What is the vaccine funding program eligibility?" The answer in OBX-5 could be "Not VFC eligible".

Refer to CDC IG in the Appendix: CDC-defined NIP003 - Observation identifiers Use in OBX-3.

OBX-4 Observation Sub-ID (ST) 00572

Definition: This field is used to group related observations by setting the value to the same number. For example, recording VIS date and VIS receipt date for a combination vaccination requires 6 OBX segments. One OBX would indicate the vaccine group. It would have a pair of OBX indicating the VIS publication date and the VIS receipt date. These would have the same OBX-4 value to allow them to be linked. The second set of three would have another OBX-4 value common to each of them.

This field may be used to link related components of an observation. Each component of the observation would share an Observation sub-id.

For example:

OBX|1|LN|^observation 1 part 1^^^^|1|...

OBX|2|LN|^ observation 1 part 2^^^^|1|...

OBX|3|DT|^a different observation^^^^|2|...

Complete [examples of VIS encoding](#) are listed at the end of the OBX section.

OBX-5 Observation Value (varies) 00573

Definition: This field contains the value observed by the observation producer. OBX-2-value *type* contains the data type for this field according to which observation value is formatted.

This field contains the value of OBX-3-observation identifier of the same segment. Depending upon the observation, the data type may be a number (e.g., dose number), a coded answer (e.g., a vaccine), or a date/time (the date/time that the VIS was given to the client/parent). An observation value is always represented as the data type specified in OBX-2-value type of the same segment. Whether numeric or short text, the answer shall be recorded in ASCII text.

Coded values

When an OBX segment contains values of CE data types, the observations are stored as a combination of codes and/or text.

OBX-6 Units (CE) 00574

Definition: This shall be the units for the value in OBX-5. The value shall be from the ISO+ list of units. If the observation in OBX-5 requires an indication of the units, they are placed here.

OBX-11 Observation Result Status (ID) 00579

Definition: This field contains the observation result status. The expected value is F or final.

OBX-14 Date/Time of the Observation (TS) 00582

Definition: Records the time of the observation. It is the physiologically relevant date-time or the closest approximation to that date-time of the observation.

OBX-17 – Observation Method (CE)

Definition: If OBX-3.1 is “64994-7” (vaccine funding program eligibility category), this field is used to transmit the method or procedure by which the observation was obtained.

In this Guide, it shall be used to differentiate the way that Eligibility Status was collected. The two choices are:

- Recorded in the sending system at the visit level
- Recorded in the sending system at the immunization level

The method of capture is messaged in OBX-17 (observation method). If the eligibility is captured by vaccine dose, OBX-17 will be valued:

“VXC40^per immunization^CDCPHINVS”

If the method of capture is per visit, OBX-17 shall be valued:

“VXC41^per visit^CDCPHINV”

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V04^VFC eligible
NA/AN^HL70064|||||F|||20090531132511|||VXC40^per
imm^CDCPHINVS<CR>

See Example below.

VFC Eligibility Status Example

Federal regulations specify that Patient Eligibility status be assessed at each immunization encounter. Eligibility refers to what funding program should pay for the vaccine. When reporting immunization-level Vaccines for Children (VFC) eligibility, OBX-2 should be valued with “CE” since the OBX-5 value will be a coded entry. The eligibility status of the patient is recorded for each vaccine dose administered.

If RXA-9.1 (Administration Note code) is “00” then the message SHALL include an OBX segment associated with the RXA with OBX-3.1 shall equal “64994-7”. This OBX will indicate the Patient Eligibility Category for Vaccine Funding Program. OBX-17 contains the observation method.

Example :

```
RXA|0|1|20120411|20120411|133^PCV 13^CVX|0.5|ML^^ISO+||00^New immuni
zation record^NIP001|^Jones^Stephanie^D^RN|^RI298|||F1655|2013030
1|PFR^Pfizer, Inc.^MVX|||CP|A|<CR>
```

```
RXR|SC^subcutaneous^HL70162|RT^right thigh^HL70163<CR>
```

```
OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V04^VFC eligible
NA/AN^HL70064|||||F|||20120411|||VXC40^per imm^CDCPHINVS <CR>
```

User Defined Table 0064 – Financial Class

Financial class refers to patient's eligibility status at the time of vaccine administration.

Value	Description
V01	Not VFC eligible
V02	VFC eligible-Medicaid/Medicaid Managed Care
V03	VFC eligible-Uninsured
V04	VFC eligible-American Indian/Alaskan Native
V05	VFC eligible-Federally Qualified Health Center Patient (under-insured)
V06	Deprecated – do not use
V07	Local –specific eligibility (not used in RI). Patients not VFC eligible but receiving state supplied vaccine should use V01.

VIS Encoding In HL7 Messages

Providers are required to provide a Vaccine Information Sheet (VIS) prior to vaccination. The VIS gives information about one or more vaccines and the diseases that they prevent. Providers are required to track the subject of the VIS (i.e. MMR), the version of the document (using publication date) and the date that the VIS was provided.

KIDSNET supports the vaccine type approach for reporting VIS. At this time KIDSNET does not support Global Document Type Identifier (GDTI) for documenting VIS in KIDSNET.

Single Vaccine (vaccine type approach)- one VIS used

If RXA-9.1 is valued "00" and RXA-5.1 is valued with a CVX code then there SHALL be an OBX segment with OBX-3.1 valued "30956-7" (vaccine type) and an OBX segment with OBX-3.1 valued "29768-9" (version date) and one OBX with OBX-3.1 valued "29769-7" (presentation /delivery date) associated. Both OBX shall have the same value in OBX-4.

```
RXA|0|1|20091010||03^MMR^CVX|0.5|ML^^ISO+||||||EZ342|20111001|MSD^^MVX|||CP
<CR>
```

```
OBX|1|CE|30956-7^vaccine type^LN|1|03^MMR^CVX|||||F|||20091010<CR>
```

```
OBX|2|TS|29768-9^VIS Publication Date^LN|1|20080110|||||F|||20091010<CR>
```

```
OBX|3|TS|29769-7^VIS Presentation Date^LN|1|20091010|||||F|||20091010<CR>
```

Combination vaccination (vaccine type approach)- multiple VIS used

In some cases more than one VIS may be used for a combination vaccine. In these cases, recording VIS date and VIS receipt date for a combination vaccination requires multiple groups of OBX segments. One OBX would indicate the vaccine group. It would have a pair of OBX indicating the VIS publication date and the VIS receipt date. These would have the same OBX-4 value to allow them to be linked. The second set of three would have another OBX-4 value common to each of them.

Example:

```

RXA|0|1|20091010||94^MMRV^CVX|0.5|ML^^ISO+|||||||EZ342|20111001|MSD^MVX|||CP<CR>
OBX|1|CE|38890-0^Component Vaccine Type^LN|1|21^Varicella^CVX|||||F|||20091010<CR>
OBX|2|TS|29768-9^VIS Publication Date^LN|1|20091010|||||F|||20091010<CR>
OBX|3|TS|29769-7^VIS Presentation Date^LN|1|20101010|||||F|||20091010<CR>
OBX|4|CE|38890-0^Component Vaccine Type^LN N|2|03^MMR^CVX|||||F|||20091010<CR>
OBX|5|TS|29768-9^VIS Publication Date^LN|2|20071010|||||F|||20091010<CR>
OBX|6|TS|29769-7^VIS Presentation Date^LN|2|20101010|||||F|||20091010<CR>

```

Note that not all combination vaccines have a single VIS. They would require that an OBX pair be sent for each VIS given to the patient

NTE—Note Segment

The NTE segment is used for sending notes and comments. It is used in relation to OBX in the VXU.

If present, the entire NTE segment is currently ignored by KIDSNET.

Observation Segment (OBX)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Sets	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	4	SI	[0..1]	[0..1]		Set ID – NTE	O	N/A
3		CE	[1..1]	[1..1]	NIP003	Observation Identifier	R	N/A

NTE field definitions***NTE-3 Comment (FT) 00098***

Definition: This field contains the comment contained in the segment.

ACK – Message Acknowledgement Grammar

Segment	Description	Optionality	Comment
MSH	Message Header	R	
MSA	Message Acknowledgement	R	
[[ERR]]	Error	RE	If an error exists, then this segment is populated. Each error will have its own ERR segment.

Acknowledging a Message--ACK

The ACK returns an acknowledgement to the sending system. This may indicate errors and the severity of the errors in processing. KIDSNET will send an HL7 ACK message for every VXU received. In general, KIDSNET will attempt to process each message that is received.

Connectivity over the Internet can fail at any time for a number of reasons. HL7 senders MUST resend a VXU message if an ACK message is not received in response from KIDSNET. Ideally, the sending system will stage the retransmission, waiting a reasonable period of time to ensure that the cause of the original failure is rectified.

If the sending system fails to receive an HL7 ACK for each VXU message from KIDSNET over a period of time please notify Jeff Goggin (Jeff.Goggin@health.ri.gov 401-222-4968) or Kim SalisburyKeith (Kim.SalisburyKeith@health.ri.gov 401-222-5925).

Receipt of an ACK from KIDSNET does not mean that all of the information in the VXU has been accepted and will be used to update the KIDSNET database. It simply means that the VXU message was received successfully.

Reviewing ACK

A sending application should review each ACK response and verify three things:

1. The response is an HL7 formatted message.
2. The response is an HL7 ACK (Acknowledgement).
 - MSH-9 contains “ACK^V04^ACK”
3. The response received is for the HL7 message that was sent.
 - The third piece of qualifying the response is verifying that the message control ID value in MSA-2 of the ACK message matches the message control ID that was in MSH-10 of the message that was originally sent.

MSH—Message Header Segment for ACK

Please refer to the [Message Header \(MSH\) Segment section](#) above for detailed information about the fields within this segment. The differences between the MSH for an incoming VXU message and the MSH for the corresponding ACK response are outlined below.

The MSH segment that is returned in the HL7 ACK response to an incoming VXU message will be identical to the MSH segment from the matching VXU except:

1. MSH-3 (Sending Application) will contain “KIDSNET_IFL”.
2. MSH-4 (Sending Facility) will contain “RIHEALTH”.
3. MSH-5 (Receiving Application) will contain the value from MSH-3 in the incoming VXU message.
4. MSH-6 (Receiving Facility) will contain the value from MSH-4 in the incoming VXU message.
5. MSH-9 will contain “ACK^V04^ACK”

Example: **MSH**|^~\&|KIDSNET_IFL|RIHEALTH|MYEHR2.5|RI88140101|20120502091524||ACK^V04^ACK|20120502RI8814010101|P|2.5.1|||NE|AL|||RIHEALTH<CR>

MSA—Message Acknowledgement Segment

Please note that this is a subset of the possible fields in an MSA segment.

Message Acknowledgement Segment (MSA)

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1	2	ID	[1..1]		0008	Acknowledgment Code	R	R
2	20	ST	[1..1]			Message Control ID	R	R

MSA Field Definitions

MSA-1 Acknowledgment Code (ID) 00018

Definition: This field contains an acknowledgment code. See message processing rules. Refer to HL7 Table 0008 - Acknowledgment code for valid values.

HL7-defined Table 0008 - Acknowledgment code

Value	Description
AA	Application accept
AE	Application error
AR	Application reject

Note: Value “AR” should only be used when a message was rejected because one of the following occurred:

1. Unsupported message type (MSH-9.1)
2. Unsupported event code (MSH-9.2)
3. Unsupported processing ID (MSH-11)
4. Unable to process for reasons unrelated for format or content

For example, KIDSNET would send an “AR” acknowledgement code if a QBP message was received. At this time KIDSNET does not accept QBP message.

MSA-2 Message Control ID (ST) 00010

Definition: This field contains the message control ID of the message sent by the sending system. It allows the sending system to associate this response with the message for which it is intended. This field echoes the message control id sent in MSH-10 by the initiating system.

Example: **MSA**|AA|20120502RI8814010101<CR>

ERR – Error Segment**Error Segment (ERR)**

SEQ	LEN	Data Type	CDC IG Cardinality	KIDSNET Cardinality	Value Set	ELEMENT NAME	CDC IG Usage	KIDSNET Usage
1		ELD				Error Code and Location	X	X
2	18	ERL	[0..1]	[0..1]		Error Location	RE	RE
3		CWE	[1..1]	[1..1]	70357	HL7 Error Code	R	R
4	1	ID	[1..1]	[1..1]	70516	Severity	R	R
5		CWE			70533	Application Error Code	O	O
6		ST				Application Error Parameter	O	O
7		TX				Diagnostic Information	O	O
8		TX				User Message	RE	RE

ERR Field Definitions

Note: If an error involves the entire message (e.g. the message is not parse-able.) then location has no meaning. In this case, ERR-2 is left empty.

Note that ERR-1 is not supported for use in messages starting with version 2.5.1

ERR-2 Error Location (ERL) 01812

Definition: Identifies the location in a message related to the identified error, warning or message. Each error will have an ERR, so no repeats are allowed on this field. This field may be left empty if location is not meaningful. For example, if it is unable to be parsed, an ERR to that effect may be returned.

ERR-2 (Error Location) will be formatted as follows:

- The 1st component contains the Segment ID
- The 2nd component contains the Segment Sequence
- The 3rd component contains the Field Position
- The 4th component contains the Field Repetition
- The 5th component contains the Component Number



Example:

```
ERR|RXA^1^16^1^1|101^REQUIRED FIELD MISSING^HL70357|W|7^REQUIRED DATA MISSING  
^HL7053||EXPIRATION DATE IS REQUIRED FOR ADMINISTERED VACCINE|
```


ERR-3 HL7 Error Code (CWE) 01813

Definition: Identifies the HL7 (communications) error code. Refer to HL7 Table 0357 – Message Error Condition Codes for valid values.

Note: Not all field values are verified during KIDSNET parsing. KIDSNET will make efforts to inform senders about errors that are identified in post-parsing process.

HL7-defined Table 0357 - Message error status codes (use in ERR-3)

Status code	Status text	Description/Comment
Success		
0	Message accepted	Success. Optional, as the AA conveys this. Used for systems that must always return a status code.
Error status codes		
100	Segment sequence error	The message segments were not in the proper order or required segments are missing.
101	Required field missing	A required field is missing from the segment.
102	Data type error	The field contained data of the wrong data type, e.g., an NM field contained letters of the alphabet.
103	Table value not found	A field of data type ID or IS was compared against the corresponding table, and no match was found.
Rejection status codes		
200	Unsupported message type	The Message type is not supported.
201	Unsupported event code	The Event Code is not supported.
202	Unsupported processing ID	The Processing ID is not supported.
203	Unsupported version ID	The Version ID is not supported.
204	Unknown key identifier	The ID of the patient, order, etc. was not found. Used for transactions <i>other</i> than additions, e.g., transfer of a non-existent patient.
205	Duplicate key identifier	The ID of the patient, order, etc. already exists. Used in response to addition transactions (Admit, New Order, etc.).
206	Application record locked	The transaction could not be performed at the application storage level, e.g., database locked.
207	Application internal error	A catchall for internal errors not explicitly covered by other codes.

ERR-4 Severity (ID) 01814

Definition: Identifies the severity of an application error. Knowing if something is Error, Warning or Information is intrinsic to how an application handles the content. Refer to HL7 Table 0516 - Error severity for valid values. The Severity code indicates if the system sending the ACK (with error) is reporting an error that caused significant error loss. For instance the message was rejected or an important segment was rejected (e.g. RXA). This allows the system that initiated the message (VXU) to alert the user that there were issues with the data sent.

Note that the definitions of these codes has been clarified and corrected.
--

HL7 Table 0516 - Error Severity (use in ERR-4)

Value	Description	Comment
I	Information	Transaction successful, but includes returned information.
W	Warning	Transaction successful, but there may be issues. These may include non-fatal errors with potential for loss of data.
E	Error	Transaction was not successful. The application rejected data that it views as important. This could include required fields or the entire message. The sender should be alerted to review and correct the message.

ERR-5 Application Error Code (CWE) 01815

Definition: Application specific code identifying the specific error that occurred. Refer to User-Defined Table 0533 – Application Error Code for appropriate values.

User-defined Table 0533 – Application Error Code (use in ERR-5)

Status code	Status text	Description/Comment
1	Illogical Date error	Date conflicts with another date in the message.
2	Invalid Date	Date is not valid or lacks required precision.
3	Illogical Value error	The value conflicts with other data in the message
4	Invalid value	The value is not valid. This applies for fields that are not associated with a table of values.
5	Table value not found	The value is not found in the associated table.
6	Required observation missing	A required observation, such as VFC eligibility status, is missing.
7	Required field missing	A required field is missing from the segment.

Illogical Date Error would include:

- Before birth immunization date
- Immunization date in the future

Invalid Date Error would include:

- 20130230 (February 30, 2013)
- 201302 (lacks required precision)

ERR-8 User Message (TX) 01817

Definition: The text message to be displayed to the application user.

Example:

```
ERR||RXA^1^16^1^1|101^REQUIRED FIELD MISSING^HL70357|W|7^REQUIRED DATA MISSING  
^HL7053|||EXPIRATION DATE IS REQUIRED FOR ADMINISTERED VACCINE|
```

Appendix A: Client specific conditions (Evidence of Immunity, Adverse Reactions, Contraindications)

Send immunizations associated with Evidence of immunity

Infection with the diseases that are the target of immunizations leads to long-term immunity. Further immunization against the disease is not likely to provide benefit.

Definition:

Evidence of immunity indicates that a person has plausible evidence that they have already developed immunity to a particular disease. The definition of plausible evidence is a local decision, but best practice would suggest that serological evidence of immunity is the strongest indicator of immunity.

The example below shows that no dose of Hep B vaccine was given because the person had evidence of previous infection with Hep B.

```
ORC|RE||197027^DCS|||||^Clerk^Myron | | | | |RI2050<CR>
RXA|0|1|20090412|20090412|998^No vaccine administered^CVX|999|||NA <CR>
OBX|1|CE|59784-9^Disease with presumed immunity ^LN|1|66071002^HISTORY OF HEP B
INFECTION|||||F|||20090412<CR>
```

The LOINC code for Evidence of Immunity that will appear in OBX-3 is 59784-9 (NIP003).

The valid code set for OBX-5 appears in the first Appendix of the CDC IG in NIP004 – Value Set Name – Evidence of Immunity – IIS.

Send immunizations associated with reactions (adverse events)

Some people experience adverse events after receipt of an immunization. These are usually recorded in conjunction with a specific immunization event. Occasionally, the exact immunization event information is unknown. (e.g. anaphylaxis occurred after a previous dose, years in the past.)

Definition: An adverse reaction is a negative physical condition that occurs shortly after one or more immunizations have been received.

The LOINC code for Reactions that will appear in OBX-3 is 31044-1 (NIP003).

The valid code set for OBX-5 appears in the first Appendix of the CDC IG in NIP004- Value Set Name –Vaccination Reaction –IIS.

```

ORC|RE||197027^DCS|||||^Clerk^Myron|^Pediatric^MARY^L^MD || || RI2050<CR>

RXA|0|1|20090412|20090412|48^HIB PRP-T^CVX|999||00^new immunization
record^NIP001|^Sticker^Nurse|^DCS_DC|||33k2a|PMC^sanofi^MVX||CP<CR>

RXR|C28161^IM^NCIT^IM^HL70162|<CR>

OBX|1|CE|31044-1^reaction^LN|1|VXC12^fever > 40.5 C^CDCPHINVS|||||F||20090415<CR>

OBX|1|CE|31044-1^reaction^LN|1|81308009^encephalopathy, disorder of brain^SCT|||||F||20090415<CR>

```

This example describes a dose of HIB given on 4/12/2009. On 4/15/2009, the client experienced a fever > 40.5C and encephalopathy.

Contraindications to Immunization

There are a number of contraindications to immunization. These may be temporary or permanent. One is a history of reactions to previous immunization. That is dealt with above. Others include allergies to components of vaccines, physical conditions, current medication and current illnesses.

Definition: A contraindication is any physical condition, current medication or other factor that indicates that a person should not receive an immunization that may be associated with the contraindication. This contraindication may be temporary or permanent.

The LOINC code for Contraindications that will appear in OBX-3 is 30945-0 (NIP003).

The valid code set for OBX-5 appears in the first Appendix of the CDC IG in NIP004- Value Set Name – Vaccination Contraindications

Examples:

```

OBX|1|CE|30945-0^Vaccination contraindication^LN|1|91930004^allergy to eggs^SCT|||||F||20090415<CR>

OBX|1|CE|30945-0^Vaccination contraindication^LN|1|VXC19^allergy to thimerasol(anaphylactic)^CDCPHINVS|||||F|
||20090415<CR>

```

Factors which indicate the need for an immunization or a changed recommendation:

Several factors can drive the need for a specific immunization or a change in the normal schedule for immunization. These may be an exposure to an infection, such as rabies. Other risk factors may include membership in a risk group.

Definition: A risk factor is some characteristic of an individual, which may lead to a recommendation for a specific vaccine.

```

OBX|1|CE|59785-6^Special Indication for vaccination^LN|1|VXC7^exposure to rabies^CDCPHINVS|||||F||20090415
<CR>

```

Appendix B: VXU and ACK Examples

Example VXU # 1-Basic message with No Errors

Johnny New Patient (male), born 4/14/13 has had 1 dose of Hep B on 4/15/13, according the record brought in by Mom (Sally Patient, maiden name –Smith – DOB May 17, 1982). They live at 123 Any Street, Somewhere, Wisconsin 54000. Johnny's race is White, his ethnicity is unknown. Nurse Sticker at Dalittle Clinic, administers the following shots on 5/31/13:

1. DTAP-Hep B-IPV (Pediarix) lot # xy3939 IM
2. HIB (ActHIB) lot # 33k2a IM

VIS were provided just prior to immunization.

Dalittle Clinic is assigned the facility identifier by KIDSNET: RI2050. The immunizations were all ordered by Dr Mary Pediatric. Johnny is eligible for Medicaid. His medical record number is 432155. Myron Clerk entered the information into the EHRs (MYEHR).

Ocean Clinical System authenticates to KIDSNET and is the Sending Facility for immunization information for several clinics including Dalittle Clinic. The Identifier assigned to Ocean Clinical System is RI88140101. Dalittle Clinic operates as a clinic site as part of Little Clinical Enterprises. Little Clinical Enterprises is the Sending Responsible Organization and has an assigned identifier of RI543763 and is the sending responsible organization.

<i>Note that we will indicate the end of each segment with a <CR>. Segments may wrap around in this document. We will insert a blank line between each segment for increased readability.</i>

Sample VXU #1 Message:

MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20130531||VXU^V04^VXU_V04|20130531RI881401010105|P|2.5.1||NE|AL|||||RI543763<CR>

PID|1||432155^^^MR||Patient^Johnny^New^^^L|Smith^Sally|20130414|M||2106-3^White^HL70005|123 Any St^^Somewhere^WI^54000^^M<CR>

NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Somewhere^WI^54000^^M|^PRN^PH^^608^5551212|||||||19820517||||eng^English^ISO639<CR>

ORC|RE||197023|||||^Clerk^Myron|||||RI2050<CR>

RXA|0|1|20130415|20130415|31^Hep B Peds NOS^CVX|999|||01^historical record^NIP001|||||<CR>

ORC|RE||197027|||||^Clerk^Myron||MD67895^Pediatric^MARY^^^MD^RIA|||||RI2050<CR>

RXA|0|1|20130531|20130531|48^HIB PRP-T^CVX|0.5|ML^^ISO+||00^new immunization record^NIP001|^Sticker^Nurse|^RI2050|||33k2a|20131210|PMC^sanofi^MVX|||CP|A<CR>

RXR|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|RT^right thigh^HL70163<CR>

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V02^VFC eligible Medicaid/Medicaid Managed Care^HL70064|||||F|||20130531||VXC40^per imm^CDCPHINVS <CR>

OBX|2|CE|30956-7^Vaccine Type^LN|2|48^HIB PRP-T^CVX|||||F|||20130531<CR>

OBX|3|TS|29768-9^VIS Publication Date^LN|2|19981216|||||F|||20130531<CR>

OBX|4|TS|29769-7^VIS Presentation Date^LN|2|20130531|||||F|||20130531<CR>

ORC|RE||197028|||||^Clerk^Myron||MD67895^Pediatric^MARY^^^MD^RIA|||||RI2050<CR>

RXA|0|1|20130531|20130531|110^DTAP-Hep B-IPV^CVX|0.5|ML^^ISO+||00^new immunization record^NIP001|^Sticker^Nurse|^RI2050|||xy3939|20140209|SKB^GSK^MVX|||CP|A <CR>

RXR|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|LT^left thigh^HL70163<CR>

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V02^VFC eligible Medicaid/Medicaid Managed Care^HL70064|||||F|||20130531||VXC40^per imm^CDCPHINVS <CR>

OBX|2|CE|38890-0^Component Vaccine Type^LN|2|20^DTaP^CVX|||||F|||20130531<CR>

OBX|3|TS|29768-9^VIS Publication Date^LN|2|20070517|||||F|||20130531<CR>

OBX|4|TS|29769-7^VIS Presentation Date^LN|2|20130531|||||F|||20130531<CR>

OBX|5|CE|38890-0^Component Vaccine Type^LN|3|08^Hepatitis B Child ^CVX|||||F|||20130531<CR>

OBX|6|TS|29768-9^VIS Publication Date^LN|3|20120202|||||F|||20130531<CR>

OBX|7|TS|29769-7^VIS Presentation Date^LN|3|20130531|||||F|||20130531<CR>

OBX|8|CE|38890-0^Component Vaccine Type^LN|4|10^IPV^CVX|||||F|||20130531<CR>

OBX|9|TS|29768-9^VIS Publication Date^LN|4|20111108|||||F|||20130531<CR>

OBX|10|TS|29769-7^VIS Presentation Date^LN|4|20130531|||||F|||20130531<CR>

Here is an example HL7 Acknowledgement (ACK) response to the HL7 VXU message #1.

Sample ACK Response #1:

```
MSH|^~\&|KIDSNET_IFL|RIHEALTH|MYEHR2.5|RI88140101|20130531||ACK^V04^ACK|43386729  
|P|2.5.1|||NE|AL|||RIHEALTH<CR>  
MSA|AA|20130531RI881401010105<CR>
```

Acknowledgement Explanation:

1. MSA-1 indicates “AA” (application accept) and there are no ERR segments returned. This does not mean that all of the information in the VXU has been accepted and will be used to update the KIDSNET database. It means the VXU message was received successfully and there were no errors to report from the KIDSNET HL7 parsing system.

Example VXU # 2-Message with Non-Fatal Errors

This VXU message from Dalittle Clinic contains non-fatal errors. When a VXU message containing non-fatal errors is received and processed by KIDSNET, an ACK response message is returned and will contain an ERR segment for each non-fatal error. The ERR segment provides information about the error, such as the error location and the type of error. ERR-4 (Error Severity) will have a value of “W” (Warning) or “I” (Information) if the error was non-fatal. See [HL7 Table 0516 - Error Severity](#) for more information about the meaning of the severity codes.

Non-fatal errors should be reviewed by the sender. While KIDSNET was able to process the information successfully, there may be issues with loss of data. If KIDSNET was unable to process important information, the reason for the data loss should be corrected by the sender so that the data loss does not occur in future transmissions. With non-fatal errors, the sender should use their discretion about whether to resubmit the information to KIDSNET.

A move to production is dependent on demonstrating the capacity to message without warnings and fatal errors.

Sample VXU #2 Message with Non-Fatal Errors:

```
MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20130531||VXU^V04^VXU_V04|20130531RI8
81401010105|P|2.5.1||NE|AL||||RI543763<CR>

PID|1||432155^^^MR||Patient^Johnny^New^^^L|Smith^Sally|20130414|M||2106-3^White^HL700
05|123 Any St^^Somewhere^WI^54000^^M<CR>

NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Somewhere^WI^54000^^M|^PRN^PH^^^608^
5551212||||||19820517||||eng^English^ISO639<CR>

ORC|RE||197028|||||^Clerk^Myron|MD67895^Pediatric^MARY^^^MD^^RIA||||RI2050<CR>

RXA|0|1|20130531|20130531|48^HIB PRP-T^CVX|0.5|ML^^ISO+||00^new immunization record
^NIP001|^Sticker^Nurse|^RI2050|||33k2a|PMC^sanofi^MVX||CP|A<CR>

RXX|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|RT^right thigh^HL70163<CR>

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V02^VFC eligible Medicaid/Medicaid
Managed Care^HL70064||||F||20130531||VXC40^per imm^CDCPHINVS <CR>

OBX|2|CE|30956-7^Vaccine Type^LN|2|48^HIB PRP-T^CVX||||F||20130531<CR>

OBX|3|TS|29768-9^VIS Publication Date^LN|2|19981216||||F||20130531<CR>

OBX|4|TS|29769-7^VIS Presentation Date^LN|2|20130531||||F||20130531<CR>
```

Sample ACK Response #2 with Non-Fatal Errors

```
MSH|^~\&|KIDSNET_IFL|RIHEALTH|MYEHR2.5|RI88140101|2013053112927||ACK^V04^ACK|353346
9|P|2.5.1||NE|AL||||RIHEALTH<CR>

MSA|AE|20130531RI881401010105|<CR>

ERR||RXA^1^16^1^1|101^REQUIRED FIELD MISSING^HL70357|W|7^REQUIRED DATA MISSING^HL70
53||EXPIRATION DATE IS REQUIRED FOR ADMINISTERED VACCINE|
```

Acknowledgement with Errors Explanation:

1. MSA-1 indicates "AE" (application error) and there are ERR segments returned. This means the VXU has been successfully received but processing has indicated a warning to report.
2. The RXA in this VXU is missing the vaccine expiration date in RXA-16. The ERR segment contains a warning (see highlighted "W" above in ERR-4) that this information is missing.

Example VXU # 3-Message with Fatal Errors

This VXU message from Dalittle Clinic contains fatal errors. When a VXU message containing fatal errors is received and processed by KIDSNET, an ACK response message is returned and will contain an ERR segment for each fatal error (and any non-fatal errors, if they exist).

The ERR segment provides information about the error, such as the error location and the type of error. ERR-4 (Error Severity) will have a value of “E” if the error is fatal. See [HL7 Table 0516 - Error Severity](#) for more information about the meaning of the severity codes. Following the VXU message below is the HL7 acknowledgement (ACK) returned by KIDSNET with an explanation.

All fatal errors must be corrected and resubmitted to KIDSNET.

Sample VXU #3 Message with Fatal Errors:

```
MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20130531||VXU^V04^VXU_V04|2013
0531RI881401010105|P|2.5.1|||NE|AL|||RI543763<CR>

PID|1||432155^^^MR||Patient^Johnny^New^^^L|Smith^Sally|20130414|M||2106-3^Whit
e^HL70005|123 Any St^^Somewhere^WI^54000^^M<CR>

NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Somewhere^WI^54000^^M|^PRN^PH
^^608^5551212|||||19820517||||eng^English^ISO639<CR>

ORC|RE||197027|||||^Clerk^Myron|MD67895^Pediatric^MARY^^^MD^^RIA||||<CR>

RXA|0|1|20130531|20130531|^CVX|0.5|ML^^ISO+||00^new immunization record ^NIP001
|^Sticker^Nurse|^|^||xy3939|20131210|PMC^sanofi^MVX|||CP|A<CR>

RXX|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|RT^right thigh^HL70163<CR>

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V02^VFC eligible
Medicaid/Medicaid Managed Care^HL70064||||F||20130531||VXC40^per
imm^CDCPHINVS<CR>

OBX|2|CE|30956-7^Vaccine Type^LN|2|48^HIB PRP-T^CVX||||F||20130531<CR>

OBX|3|TS|29768-9^VIS Publication Date^LN|2|19981216||||F||20130531<CR>

OBX|4|TS|29769-7^VIS Presentation Date^LN|2|20130531||||F||20130531<CR>
```

A fatal error is indicated by the “E” in ERR-4 (Severity). This means data was lost and the error must be corrected and the data resubmitted.

Be aware that the value “AR” (Application Reject) in the MSA-1 Acknowledgement Code is reserved for four errors only: Unsupported message type (MSH-9.1); Unsupported event code (MSH-9.2); Unsupported processing ID (MSH-11); Unable to process for reasons unrelated for format or content. When ERR segments are present in the ACK, MSA-1 will usually contain “AE” (Application Error).

Sample ACK Response #3 with Fatal Errors

MSH|^~\&|KIDSNET_IFL|RIHEALTH|MYEHR2.5|RI88140101|20130531||ACK^V04^ACK|3533469|P|2.5.1|||NE|AL|||RIHEALTH<CR>

MSA|AE|20130531RI881401010105|<CR>

ERR||RXA^1^5^1^1|101^REQUIRED FIELD MISSING^HL70357|E|7^REQUIRED DATA MISSING^HL70533|||RXA-5 DOES NOT CONTAIN A CVX OR CPT CODE||<CR>

ERR||RXA^1^11^1^4|101^REQUIRED FIELD MISSING^HL70357|E|4^INVALID VALUE^HL70533|||RXA-11.4 DOES NOT CONTAIN A VALID KIDSNET PROVIDER ID FOR AN ADMINISTERED VACCINE|<CR>

Acknowledgement with Errors Explanation:

1. MSA-1 indicates “AE” (application error) and there are ERR segments returned. This means the VXU has been successfully received but processing has indicated errors to report.
2. ERR segment #1: The administrative code (RXA-5.1) is missing therefore this is a fatal error which is indicated by the “E” in ERR-4 (Severity).
3. ERR segment #2: The administering location (RXA-11.4) is required for reporting of administered immunizations. This value is supplied by KIDSNET. Since the required information is missing this is a fatal error which is indicated by the “E” in ERR-4 (Severity).

Corrected VXU:

Sample VXU #3 Message Corrections are Highlighted:

MSH|^~\&|MYEHR2.5|RI88140101|KIDSNET_IFL|RIHEALTH|20130531||VXU^V04^VXU_V04|20130531RI881401010105|P|2.5.1|||NE|AL|||RI543763<CR>

PID|1||432155^^^MR||Patient^Johnny^New^^^L|Smith^Sally|20130414|M||2106-3^White^HL70005|123 Any St^^Somewhere^WI^54000^^M<CR>

NK1|1|Patient^Sally|MTH^mother^HL70063|123 Any St^^Somewhere^WI^54000^^M|^PRN^PH^^^608^5551212|||19820517|||eng^English^ISO639<CR>

ORC|RE||197027|||Clerk^Myron|MD67895^Pediatric^MARY^^^MD^^RIA|||<CR>

RXA|0|1|20130531|20130531|48^HIB PRP-T^CVX|0.5|ML^^ISO+||00^new immunization record ^NIP001|^Sticker^Nurse|^RI2050|||xy3939|20131210|PMC^sanofi^MVX||CP|A<CR>

RXR|C28161^IM^NCIT^IM^INTRAMUSCULAR^HL70162|RT^right thigh^HL70163<CR>

OBX|1|CE|64994-7^vaccine fund pgm elig cat^LN|1|V02^VFC eligible Medicaid/Medicaid Managed Care^HL70064|||F||20130531||VXC40^per imm^CDCPHINVS<CR>

OBX|2|CE|30956-7^Vaccine Type^LN|1|48^HIB PRP-T^CVX|||F||20130531<CR>

OBX|3|TS|29768-9^VIS Publication Date^LN|1|19981216|||F||20130531<CR>

OBX|4|TS|29769-7^VIS Presentation Date^LN|1|20130531|||F||20130531<CR>